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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/830,795	04/30/2001	Marten Stjernstrom	P0214	3545

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EXAMINER

HANDY, DWAYNE K

ART UNIT PAPER NUMBER

1743

DATE MAILED: 02/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/830,795

Applicant(s)

STJERNSTROM, MARTEN

Examiner

Dwayne K. Handy

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 6-12 and 14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 6-12 and 14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

2. Claims 6-8, 10, 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Litborn (WO 98/33052) in view of Hawkins et al. (5,198,353). Litborn teaches a method of preventing evaporation from liquid samples in small volumes. The method includes providing a plate with wells for depositing a sample upon (the plate is best shown in Figure 1), depositing sample material into a well (called a vial in the reference) on a flat surface and covering the sample material in the well with a layer of a second solvent, allowing solvent containing the sample to evaporate, replacing the evaporated solvent with fresh solvent. This is shown in Figures 2A, 3A and 4. Figure 4

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shows the deposition of a sample. Figures 2A and 3A show the continuous addition of a second solvent (or “covering liquid”) to the sample. This second solvent or covering liquid is immiscible with the fluid that contains the sample. This is noted in the Abstract and in claim 1. The general process is described in Example 1 on page 16, lines 13-34 in reference to Figure 8. This section also includes the use of flow controlled micropumps attached to narrow bore capillaries for the addition of fluid to the wells. Litborn **does not teach** the use of a cover liquid that is miscible with the sample liquid. Litborn does, however, suggest that interaction between the covering and sample liquids may be required for adding and/or extracting compounds, reactants or products from the sample liquid. This is suggested in claims 10-13 as well as on pages 9, lines 23-35 and again in Example 1, which discloses a protein reaction. In Example 1, a protein reaction is performed and the product recovered by evaporation or direct injection into an electrophoretic column.

Hawkins teaches a method for preparing a stabilized enzyme dispersion. The method involves the contacting of two aqueous solutions – one of which contains the protein - to precipitate the enzyme. Example 3 (column 11, lines 33-46) recites a method where the aqueous solution for causing the precipitation is acetone (This is also in claims 8 and 10). The acetone solution is added to a protease solution to cause the protease to precipitate. It would have been obvious to one of ordinary skill in the art to combine the use of acetone from Hawkins with the method of Litborn. Litborn teaches that their method may be used in protein reactions (Example 1). Litborn also teaches that their covering liquid may interact with reaction products, contain reagents, or have

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the ability to extract components. One would use acetone as the covering liquid in order to precipitate out and collect (or analyze) the protein compounds without having to evaporate the sample or covering liquid. This would save processing time.

3. Claims 9 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Litborn (WO 98/33052) in view of Hawkins et al. (5,198,353) and further in view of Mian (6,319,469). Litborn and Hawkins, as combined above for claims 6-8, 10, 12 and 14, teach every element of claims 9 and 11 except for the microarea, microchannel, and reservoir being part of a microfluidic device and the step of anchoring the sample in the microarea. Mian teaches a microfluidic device used to analyze microsamples. The device is comprised of a microchannel network that is loaded through an array of input ports by a sample loader (column 26). The sample loader may be used in a dynamic manner (col. 26, lines 49-51), but the use of solvent is not mentioned. Mian teaches anchoring material in the device in column 38, lines 8-33. It would have been obvious to combine the teachings of Mian with the combined teachings of Litborn and Hawkins. One would add the teachings of Mian in order to use the analytical elements of their device. One would anchor the material in the channels or reservoirs in order identify sample material through the use of specific binding partners as taught by Mian.

Response to Arguments

4. Applicant's arguments, filed 10/03/2005, with respect to the rejection(s) of claim(s) 6-8, 10, 12 and 13 under Litborn (WO 98/33052) and Williams et al. (5,171,989)

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have been fully considered and are persuasive. The Examiner agrees with Applicant that one of ordinary skill in the art would not be motivated to combine the teachings of Williams with the teachings of Litborn. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Litborn (WO 98/33052) and Hawkins et al. (5,198,353). Please see paragraph 2 above.


Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dwayne K. Handy whose telephone number is (571)-272-1259. The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on (571)-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DKH
February 6, 2006


Jill Warden
Supervisory Patent Examiner
Technology Center 1700